

WHAT IS CLAIMED IS:

1. Digital radio communications apparatus comprising:
a base unit; a local handset communicable with said base unit;
and a distant handset communicable with said base unit,

5 wherein said local handset comprises: a radio section for
performing radio communications; a base unit communications
controller for performing radio communications with said base
unit; a direct inter-handset communications controller for
performing direct radio communications between handsets; a
10 direct inter-handset communications transition controller for
making control to establish direct inter-handset communications
while maintaining communications with a base unit as well as
transmitting control channels for direct inter-handset
communications in vacant slots in the receiving time zones for
15 communications with said base unit; and a basic controller for
controlling the components of the local handset; and

said distant handset comprises: a radio section for
performing radio communications; a base unit communications
controller for performing radio communications with said base
20 unit; a direct inter-handset communications controller for
performing direct radio communications between handsets; a
direct inter-handset communications transition controller for
making control to establish direct inter-handset communications
while maintaining communications with said base unit as well
25 as scanning control channels for direct inter-handset

communications in the time zones other than the slots occupied by communications with said base unit; and a basic controller for controlling the components of the distant handset.

5 2. The digital radio communications apparatus according to claim 1, wherein said direct inter-handset communications transition controller makes control to establish direct inter-handset communications while maintaining communications with said base unit and scans control channels
10 for direct inter-handset communications in the time zones other than the slots occupied by communications with said base unit as well as determines whether to release or maintain communications with said base unit depending on the success or failure of establishment of direct inter-handset
15 communications.

 3. Digital radio communications apparatus comprising:
a base unit; and a handset communicable with said base unit,
 wherein said handset comprises: a radio section for
20 performing radio communications; a base unit communications controller for performing radio communications with said base unit; a direct inter-handset communications controller for performing direct radio communications between handsets; a direct inter-handset communications transition controller for
25 making control to establish direct inter-handset communications

while maintaining communications with said base unit as well as determines whether to release or maintain communications with said base unit depending on the success or failure of establishment of direct inter-handset communications; and a
5 basic controller for controlling the components of the handset, and

said direct inter-handset communications transition controller releases radio communications with said base unit in case direct inter-handset communications has been
10 successfully established and maintains communications via said base unit in case direct inter-handset communications cannot be established.

4. The digital radio communications apparatus
15 according to claim 3, wherein said direct inter-handset communications transition controller makes control to establish direct inter-handset communications while maintaining communications with said base unit as well as transmits control channels for direct inter-handset communications in vacant slots
20 in the receiving time zones for communications with said base unit.

5. Digital radio communications apparatus comprising:
a base unit; a local handset communicable with said base unit;
25 and a distant handset communicable with said base unit,

wherein said base unit comprises: a radio section for performing radio communications; and a controller for controlling the components as well as communicating to the local handset the channels used by the distant handset as channels
5 used by said distant handset and said base unit communicated from said distant handset, and

said local handset comprises: a radio section for performing radio communications; a base unit communications controller for performing radio communications with said base
10 unit; a direct inter-handset communications controller for performing direct radio communications between handsets; a direct inter-handset communications transition controller for making control to establish direct inter-handset communications while maintaining communications with said base unit,
15 determining whether to release or maintain communications with said base unit depending on the success or failure of establishment of direct inter-handset communications, requesting said base unit to communicate the channels used by said distant handset, and checking whether the channels
20 transmitted from said distant handset to said base unit can be received in the channels used by said distant handset at a transition to direct inter-handset communications; and a basic controller for controlling the components of the local handset.

25 6. Digital radio communications apparatus comprising:

a base unit; a local handset communicable with said base unit;
and a distant handset communicable with said base unit,

wherein said base unit comprises: a radio section for
performing radio communications; and a controller for
5 controlling the components as well as communicating to the local
handset the channels used by the distant handset as channels
used by said distant handset and said base unit communicated
from said distant handset, and

said local handset comprises: a radio section for
10 performing radio communications; a base unit communications
controller for performing radio communications with said base
unit; a direct inter-handset communications controller for
performing direct radio communications between handsets; a
direct inter-handset communications transition controller for
15 making control to establish direct inter-handset communications
while maintaining communications with said base unit,
determining whether to release or maintain communications with
said base unit depending on the success or failure of
establishment of direct inter-handset communications, and
20 communicating the channels used by said local handset requested;
and a basic controller for controlling the components of the
local handset, and

said distant handset comprises: a radio section for
performing radio communications; a base unit communications
25 controller for performing radio communications with said base

unit; a direct inter-handset communications controller for performing direct radio communications between handsets; a direct inter-handset communications transition controller for making control to establish direct inter-handset communications while maintaining communications with said base unit, determining whether to release or maintain communications with said base unit depending on the success or failure of establishment of direct inter-handset communications, and checking whether the channels transmitted from the distant handset to the base unit can be received at a transition to direct inter-handset communications; and a basic controller for controlling the components of the distant handset.

7. Digital radio communications apparatus comprising:
15 a base unit and handsets communicable with said base unit, wherein said handset comprises: a radio section for performing radio communications; a base unit communications controller for performing radio communications with said base unit; a direct inter-handset communications controller for performing direct radio communications between handsets; a
20 direct inter-handset communications transition controller for making control to establish direct inter-handset communications while maintaining communications with said base unit, determining whether to release or maintain communications with
25 said base unit depending on the success or failure of

establishment of direct inter-handset communications,
requesting said base unit to communicate the channels used by
a distant handset and said base unit, and checking whether the
channels transmitted from the distant handset to said base unit
5 can be received in said requested channels used; and a basic
controller 286 for controlling the components of the handset,
said base unit comprises: a radio section for performing
radio communications; and a controller for controlling the
components of said base unit as well as communicating the channels
10 used for communications with a distant handset in response to
an inquiry from said local handset, and
said direct inter-handset communications transition
controller checks whether the channels transmitted from the
distant handset to said base unit can be received at a transition
15 to direct inter-handset communications.

8. Digital radio communications apparatus comprising:
a base unit and handsets communicable with said base unit,
wherein said handset comprises: a radio section for
20 performing radio communications; a base unit communications
controller for performing radio communications with said base
unit; a direct inter-handset communications controller for
performing direct radio communications between handsets; an
attribute information storage section for storing a
25 communications type provided by the local handset; an attribute

information transmitting section for communicating the communications type provided by the local handset to the distant handset as well as receiving the communications type provided by the distant handset; a communications means determination section for determining whether to maintain inter-handset communications via said base unit or activate direct inter-handset communications based on the attribute information of the local handset and the attribute information of the distant handset; and a basic controller for controlling the components of the handset, and

said communications means determination section recognizes a communication type supported by the handsets and determines whether to make a transition to direct inter-handset communications or maintain inter-handset communications via said base unit based on said recognized communications type.

9. Digital radio communications apparatus comprising:
a base unit and handsets communicable with said base unit,
wherein said handset comprises: a radio section for performing radio communications; a base unit communications controller for performing radio communications with said base unit; a direct inter-handset communications controller for performing direct radio communications between handsets; an attribute information storage section for storing a communications type provided by a local handset; an attribute

information transmitting section for communicating the communications type provided by a local handset to a distant handset as well as receiving a communications type provided by the distant handset; a communications means determination
5 section for determining whether to maintain communications via said base unit or activate direct inter-handset communications based on the attribute information of the local handset and the attribute information of the distant handset; and a basic controller for controlling the components of the handset as well
10 as making control to transmit the attribute information of the local handset when transmitting a call request for an incoming call response,

said base unit comprises: a radio section for performing radio communications with said handsets; and a controller for
15 controlling the components of said base unit as well as transmitting attribute information received from one handset during inter-handset communications via said base unit to another handset, and

said communications means determination section
20 activates an available communications type based on the attribute information of the handset transmitted from said controller.

10. Digital radio communications apparatus comprising:
a base unit and handsets communicable with said base unit,
25 wherein said handset comprises: a radio section for

performing radio communications; a base unit communications controller for performing radio communications with said base unit; a direct inter-handset communications controller for performing direct radio communications between handsets; an
5 attribute information storage section for storing a communications type provided by a local handset; an attribute information transmitting section for communicating the communications type provided by the local handset to a distant handset as well as receiving a communications type provided by
10 the distant handset; a communications means determination section for determining whether to maintain communications via said base unit or activate direct inter-handset communications based on the attribute information of the local handset and the attribute information of the distant handset; and a basic
15 controller for controlling the components of the handset as well as making control to transmit a Call Request message containing the communications type specified at call origination,

said base unit comprises: a radio section for performing radio communications with handsets; and a controller for
20 controlling the components of the base unit as well as transmitting in the content of broadcasting the communications type contained in the call request from a handset, and

said communications means determination section activates communications according to the communications type
25 transmitted in said broadcasting notice.

11. Digital radio communications apparatus comprising:
a base unit and handsets communicable with said base unit,
wherein said handset comprises: a radio section for
5 performing radio communications; a base unit communications
controller for performing radio communications with said base
unit; a direct inter-handset communications controller for
performing direct radio communications between handsets; an
attribute information storage section for storing a
10 communications type provided by a local handset; an attribute
information transmitting section for communicating the
communications type provided by the local handset to a distant
handset as well as receiving a communications type provided by
the distant handset; a communications means determination
15 section for determining whether to maintain communications via
said base unit or activate direct inter-handset communications
based on the attribute information of the local handset and the
attribute information of the distant handset; and a basic
controller for controlling the components of the handset as well
20 as making control to transmit a Call Request message containing
the specified communications type at a call request;

said base unit comprises: a radio section for performing
radio communications with handsets; and a controller for
controlling the components of the base unit as well as
25 transmitting in the content of broadcasting the attribute

information contained in the call request from a handset; and

5 said communications means determination section releases
inter-handset communications via said base unit and activates
direct inter-handset communications in case the local handset
is a called handset.

12. Digital radio communications apparatus comprising:
a base unit and handsets communicable with said base unit,
wherein said handset comprises: a radio section for
10 performing radio communications; a base unit communications
controller for performing radio communications with said base
unit; a direct inter-handset communications controller for
performing direct radio communications between handsets; an
attribute information storage section for storing a
15 communications type provided by a local handset; an attribute
information transmitting section for communicating the
communications type provided by the local handset to a distant
handset as well as receiving a communications type provided by
the distant handset; a communications means determination
20 section for determining whether to maintain communications via
said base unit or activate direct inter-handset communications
based on the attribute information of the local handset and the
attribute information of the distant handset as well as
determining whether an incoming call may terminate; and a basic
25 controller for controlling the components of the handset as well

as making control to transmit the attribute information of the local handset at transmission of a call request in case the local handset is a called handset;

5 said base unit comprises: a radio section for performing radio communications with handsets; and a controller for controlling the components of the base unit as well as transmitting in the content of broadcasting the attribute information contained in the call request from a handset; and

10 said communications means determination section activates communications according to the communications type in said attribute information broadcast.